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FOREIGN ANIMAL DISEASES REPORT  
VOL. 1, NO. 1, JANUARY 1972



U. S. DEPT. OF AGRICULTURE  
NATIONAL ANIMAL DISEASE SURVEILLANCE  
MAR 28 1974  
BY

EMERGENCY PROGRAMS  
VETERINARY SERVICES  
ANIMAL AND PLANT HEALTH SERVICE  
UNITED STATES DEPARTMENT OF AGRICULTURE

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VENEZUELAN EQUINE ENCEPHALOMYELITIS  
SURVEILLANCE PROGRAM  
1972

Venezuelan equine encephalomyelitis (epidemic strain) was first identified in Venezuela in 1936. For over 20 years VEE remained confined to the northern part of South America. In 1969, the disease appeared in Central America and within 2 years spread 2,500 miles northward through Central America and Mexico. The disease moved into the lower Rio Grande Valley of Texas in late June 1971.

A massive campaign involving State and Federal agencies was launched to contain the disease and reduce its impact on human health and the equine industry. The program contained three basic parts, (1) control of horse movements, (2) control of the vectors (mosquitoes) and (3) vaccination of all equidae in the outbreak area and a zone extending north, east, and west of sufficient depth to reduce the probability of the disease spreading.

Approximately 13 million acres of land were sprayed with malathion or dibrom using the ultra-low-volume technique. Over 2.8 million horses were vaccinated in 19 States and the District of Columbia. The program limited the spread of the virus to 25 counties in southern Texas.

However, not all horses were vaccinated and together with new colts and new herd additions may serve to potentiate the disease during the coming 1972 vector season. Additionally, the role other mammals and birds may play in the spread of VEE is not clearly understood and the disease may continue to spread in spite of the large number of horses vaccinated. For these reasons it is evident that a surveillance program is essential to determine the area of viral activity and establish an early warning alert system when the disease moves.

Emergency Programs of the Veterinary Services, Animal and Plant Health Service, is coordinating the VEE Surveillance Program with other concerned agencies, including Center for Disease Control, Department of Defense, Texas A & M University, University of Wisconsin, South Dakota State University, University of California, State public health officials, and State animal health officials. The National Animal Disease Laboratory, Ames, Iowa, will provide laboratory support for the program.

The VEE Surveillance Program consists of three parts. The first and most essential part is the prompt reporting and field and laboratory investigations of all suspected encephalitis cases in horses or other equidae throughout the United States - in both the vaccinated and unvaccinated zones. The horse is the best known sentinel animal for VEE and each suspected encephalitis case must be promptly concluded to assure adequate lead time for control measures to be instituted should the disease spread. Laboratory investigations of suspected cases will include diagnostic procedures for VEE, EEE, and WEE.

The second part of the program consists of serological sampling of certain wild mammals, domestic dogs and other domestic livestock in a well-defined belt extending from coast to coast through the vaccination zone (see map) and north of the known viral activity area in 1971. As information develops during the coming vector season, this belt will be adjusted accordingly. For all practical purposes, equidae in the vaccination zone will be of limited value as sentinel animals since over 90 percent were vaccinated.

A number of military bases with entomologists and veterinarians are located in the survey belt. Their assistance in securing sera from wild mammals and dogs is being requested from the Department of Defense.

The Department of the Interior has a number of predatory control personnel stationed from Texas to California. Their assistance has been requested in obtaining sera samples from animals known to be capable of developing VEE antibodies, such as dogs, foxes, coyotes, opossums, raccoons, and deer.

Limited research data indicates the domestic dog may serve as a sentinel animal for the presence of VEE virus. Plans are being developed to utilize dog sera collected from select dog pounds in the survey belt. These samples will be collected by Animal and Plant Service Animal Health personnel located in the area. When serological results indicate that there is possible VEE viral activity in a new area, hamsters or rabbits will be used as sentinel animals to confirm the presence of the virus.

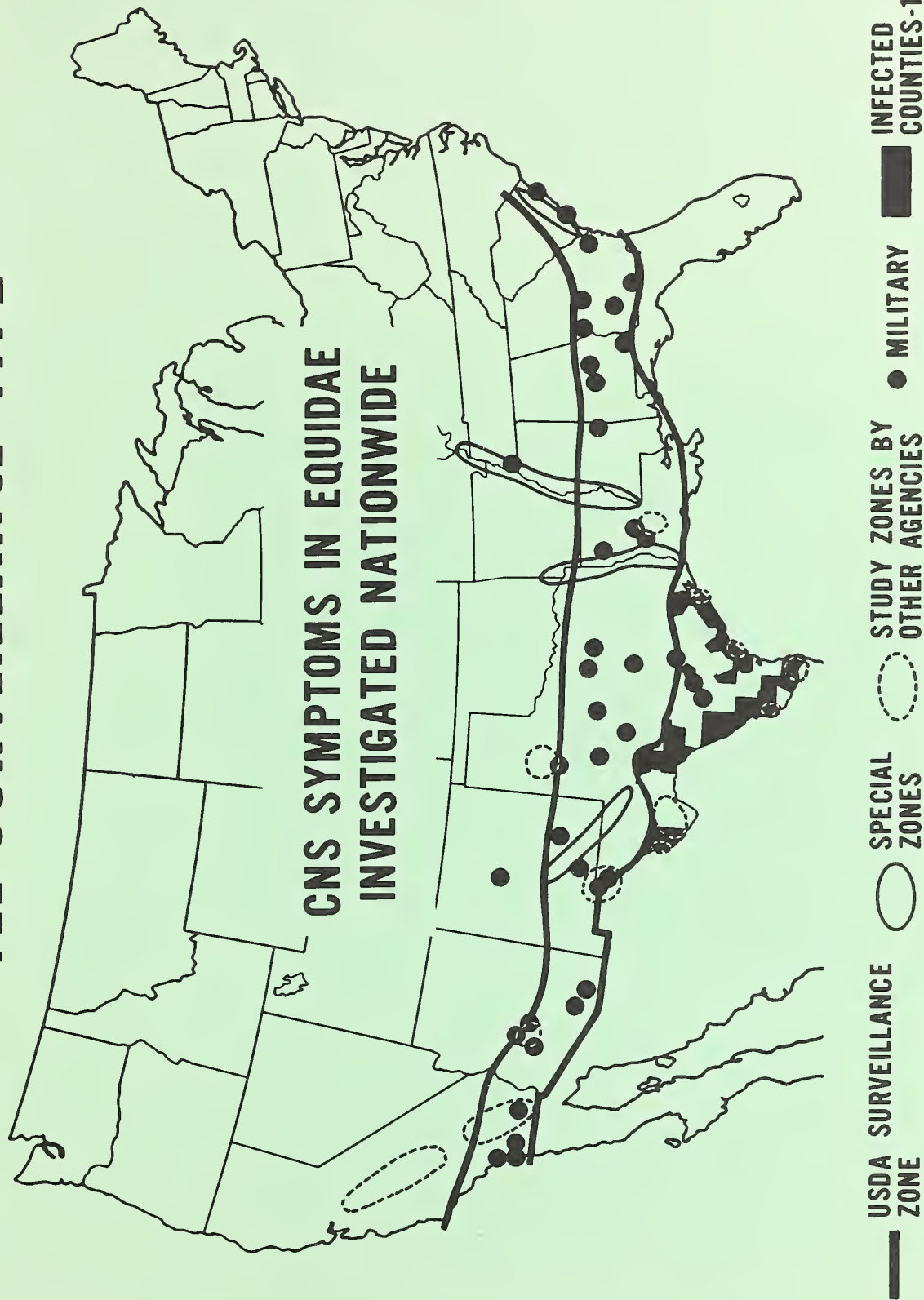
The third part of the program involves research and surveillance projects conducted by other agencies, including Center for Disease Control, Department of Defense, Texas A & M University, University of Wisconsin, and University of California. These projects will include insect trapping and serological studies in the known infected area and outside the infected area.

The diverse studies planned for the coming vector season should provide much needed data for the control of VEE.



# VEE SURVEILLANCE-1972

## CNS SYMPTOMS IN EQUIDAE INVESTIGATED NATIONWIDE



— USDA SURVEILLANCE ZONE

○ SPECIAL ZONES

○ STUDY ZONES BY OTHER AGENCIES

● MILITARY

■ INFECTED COUNTIES-1971

U.S. DEPARTMENT OF AGRICULTURE

VETERINARY SERVICES

ANIMAL AND PLANT HEALTH SERVICE

## I. SUMMARY OF VEE ACTIVITIES FOR CY 1971

In 25 counties in Texas, 74 herds had epidemic VEE virus isolated. Last isolation was from a sample collected on 10-4-71 in Crockett County, Texas. An additional 73 herds were positive for epidemic VEE by neutralization test. There were 4 cases of WEE, 76 cases of EEE, and 88 human cases laboratory confirmed. The last human case was on 10-2-71. Excellent cooperation and assistance was received from the Center for Disease Control, Atlanta, and Veterinary Sciences Research, Denver, with the laboratory diagnostic testing for VEE during the epidemic. Other laboratories gave assistance also but not with the volume of samples sent to the Center for Disease Control and Veterinary Sciences Research.

### Vaccination

Fee Basis - 19 States and D.C. - 2,854,191 horses vaccinated.

Reactions to the vaccine vary from 1-35 percent depending on the degree of reaction reported.

### Investigations

1,563 herds were investigated with several subsequent investigations per herd.

## II. VACCINATIONS

### VEE Vaccination Instructions 1972

A continuation of last year's active immunization program against VEE in equidae must be promoted by all personnel and cooperating agencies in the Animal Health Programs. An intensive information campaign will be established in those portions of the country where the greatest risk of disease exists. Information will also be disseminated throughout the remainder of the country encouraging vaccination.

In those areas where risk of continuing infection is great, all horses missed in 1971, and non-vaccinated horses introduced to the area and 1971 colts vaccinated when younger than 6 months of age should be immunized before vectors emerge this year.

It must be pointed out that no revaccination should be made using the diluent that was available with the U.S. Department of Agriculture's distributed vaccine. The diluent packed with the commercially available vaccine does not contain the same protein fraction, thereby reducing the danger of anaphylactic reactions.

Arrangements for vaccinating horses this year will have to be established between owners and practicing veterinarians.

### Number of Vaccinations Reported During January

There were 1,405 vaccinations reported from 14 States during this period.



### III. INVESTIGATIONS

During the month of January, a total of 12 investigations of suspected equine encephalitis cases were conducted in the States of Colorado, Delaware, Florida, Idaho, Illinois, Louisiana, North Carolina, Pennsylvania, and Tennessee.

### IV. LABORATORY

It has been estimated that 6,000 specimens will be collected from 1,200 herds of horses suspicious of VEE in the United States during CY 1972. The laboratory examination of these specimens will consist of virus isolation, histopathology, and serology. Differential diagnostic examinations will be conducted as appropriate, including EEE and WEE.

The primary laboratory procedure for surveillance samples will be the HI test to detect VEE antibodies. Serum neutralization tests and virus isolation from sentinel animals will be conducted as necessary.

### V. 1971 SURVEYS - Incomplete Results

VEE Mississippi Survey, Equine Paired Serums, Pre- and Post-Vaccination and Other Serums from Wildlife and Domestic Animals. (Jackson County)

August 1971 collections on pre-vaccinated horses revealed no VEE HI antibodies in 103 horses. There was an increase in titer of 88 of 103 horses on post-vaccination sampling.

A total of 192 other animals were HI negative (62 cattle, 26 hogs, 19 wild hogs, 26 dogs, 11 sheep, 11 squirrels, 2 turtles, 6 rabbits, 13 birds, 2 snakes, 9 rats, 3 armadillo, 1 raccoon, and 1 opossum).

VEE Mississippi Survey, Equine Paired Serums, Pre-and Post-Vaccination and Other Serums from Wildlife and Domestic Animals. (Hancock County)

There was no pre-vaccination VEE titer in 112 horses. There was an increase in titer in 68 of 76 on post-vaccination sampling. No VEE diagnostic titer in 17 dogs, 36 cattle, 24 hogs, 1 turtle, 33 goats, 6 sheep, 10 opossum, 5 raccoons, 2 cats, 1 snake, 11 rats, and 10 birds.

VEE Alabama Survey, Equine Paired Serums, Pre- and Post-Vaccination.

No pre-vaccination HI titer in 90 horses.

There were 86 of 87 conversions on post-vaccination sampling.

Cameron County Study - Summer of 1971

All HI reactions less than positive at 1-20 dilution are considered to be negative for surveillance purposes.

### Bovine

After 30 days or more of exposure 4/258 were HI positive. Three of the four had titers 1-20, the other 1-40.

### Goats

After 45 days exposure 20/41 were HI positive in one herd and 24/24 were negative in other herds.

### Domestic Birds

After 45 days exposure, 8/8 domestic birds were negative.

### Dogs

After 45 days exposure, 6/9 dogs were negative. Of the three positives, one had a titer of 1:320 and the other two had titers of 1:640. These three positive dogs were from the same premises.

In Jefferson County, Texas, 22/22 cattle were negative to VEE from samples collected 9/23/71.

In the El Paso, Texas, area 4 deer, 1 coyote, and 1 Jackrabbit were negative to VEE from samples collected in December 1971.

## VI. COOPERATIVE AGREEMENTS

The Animal and Plant Health Service has entered into cooperative agreements for surveillance programs with the following agencies:

### University of California

The object of this cooperative agreement is to conduct a surveillance program in California in San Diego, Imperial, and Riverside Counties to determine the prevalence or lack of Venezuelan Equine Encephalomyelitis (VEE) virus or antibodies in birds and mammals including bovidae, equidae, domestic canines, domestic and wild fowl, and information, developed by this study, will

(1) provide an additional sentinel system for the early detection of VEE if it is introduced, (2) provide data on VEE antibodies in domestic animals and wildlife in California, and (3) will identify arbovirus isolations obtained from insects, birds, and mammals.

### College of Veterinary Medicine, Texas A&M University #1 Contract

The objective of this cooperative agreement is to measure the Venezuelan Equine Encephalomyelitis (VEE) antibody titers present in cattle, sheep, goats, swine, and dogs in known infected areas and in areas where there is no evidence of VEE virus activity in Texas, and to relate VEE antibody titers in domestic animals to persistence and movement of VEE virus to non-infected areas. Such information, as developed by this study, will

(1) provide knowledge on possible sentinel systems for the future detection

of VEE, (2) provide field data on the VEE virus and its association with vectors, (3) provide knowledge on the ecological habitat necessary for the maintenance of this disease, and (4) provide a baseline of VEE antibody titers in domestic animals in an infected area.

#### College of Veterinary Medicine, Texas A&M University #2 Contract

##### Objectives:

1. Through the comparison of 1970-1971 health records with current 1971-1972 experience during gestation and foaling to determine whether or not there is any evidence of abnormality which may reasonably be attributed to vaccination with TC-83 during pregnancy.
2. If any such abnormalities do appear, to determine their number in a group of approximately 600 mares for which accurate breeding, vaccination, and foaling records are available for the period 1970 through 1972.
3. To determine the nature and significance of such abnormalities as may appear in the group of vaccinated mares and their foals selected for study in comparison with abnormalities of previous years prior to vaccination.

#### University of Wisconsin

The objective of this Cooperative Agreement is to conduct a surveillance program in Texas, at the Welder Wildlife Foundation in San Patricio County, Texas, to determine the role of wild birds, mammals, and reptiles in the epizootiology of Venezuelan Equine Encephalitis (VEE) by the correlation of populations, home ranges, and behavior patterns of such wildlife in San Patricio County, Texas, with the presence or lack of VEE virus antibodies in wildlife and that such information will: (1) provide knowledge on possible sentinel systems for the future detection of VEE, (2) provide field data on the VEE virus and its association with wildlife, (3) provide additional information on possible VEE virus in wildlife, and (4) provide a baseline of VEE antibody titers in wildlife in an infected area.

#### South Dakota State University

The objective of this cooperative agreement is to conduct surveillance studies in animals and birds regarding the prevalence of Venezuelan equine encephalomyelitis (VEE) in South Dakota, which will (1) provide an additional sentinel system for the early detection of VEE if it is introduced, (2) provide data on VEE in migratory water fowl in South Dakota, (3) provide a baseline for VEE antibodies in animals and migratory water fowl in those States where VEE is not known to exist, and (4) utilize South Dakota State University's current arbovirus surveillance program to include surveillance for VEE.



## VII. ACTIVITIES OF OTHER COOPERATING AGENCIES

The Center for Disease Control, Texas A&M, Texas Department of Health, Department of Defense, and probably other agencies will be conducting research surveillance programs in southern Texas where VEE occurred during 1971. Veterinary Services has established liaison with these agencies.

The California Department of Public Health will continue to conduct extensive VEE surveys in mosquitoes, horses, and other mammals in the Imperial and San Joaquin Valleys.

### The Center for Disease Control

Plans to continue studies on insects and mammals in Cameron and Hidalgo Counties of Texas and other areas of importance.

### Army Entomologists from Walter Reed

Insect and small mammal surveillance in Evangeline Parish, Louisiana, and possibly in the Midland-Odessa area of Texas.

### Texas A&M Entomologists

Plan to work in areas along the gulf coast from Galveston to Brownsville, plus Big Bend, Midland-Odessa area, and southeastern New Mexico--insects only.

### ARS, Veterinary Sciences Research

Veterinary Sciences Research Division is currently conducting two projects:

1. Development of data relating to the correlation of VEE antibody levels in serum to refractivity against challenge with standardized dose of virulent VEE virus.
- (2) conduct studies designed to determine the character and extent of central nervous system changes in the horse following vaccination with the TC-83 vaccine.









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### HORSE OWNERS URGED TO VACCINATE FOR VEE

Secretary of Agriculture, Earl L. Butz, recently announced a new campaign urging horse owners to vaccinate now for Venezuelan equine encephalomyelitis (VEE) before disease-carrying mosquitoes emerge in the warm months ahead.

The 1972 campaign calls for the vaccination of all horses missed (not vaccinated) in 1971, in Texas, the gulf coast States, and States adjoining Mexico, all of which are now designated as "high-risk" areas. As cases are reported, new "high-risk" areas will be identified, and the same vaccination recommendation will apply.

The "missed" horses include: (1) unvaccinated horses that have recently moved into the "high-risk" areas; (2) foals born since last year's vaccination drive; (3) foals vaccinated too young to develop lasting immunity (under 6 months old when vaccinated); and (4) horses that were overlooked and never vaccinated.

Risk of disease occurrence is greatest in areas of known infection. The epidemic VEE virus was isolated in 75 herds in 26 Texas counties in 1971, with the last isolation from specimens taken in November. But very little is known about the behavior of this virus in a temperate climate. Species of mosquitoes known to carry the virus range as far north as Minnesota and the New England States.

Since it is not known where VEE may strike, animal health authorities with USDA's Animal and Plant Health Service (APHS) urge that States outside "high-risk" areas determine now whether to begin a statewide vaccination program to prevent a possible epidemic or loss of individual horses. Since adequate commercial vaccine is available to veterinarians in most States, USDA will not furnish vaccine nor pay for its administration in the current program,

A cooperative State-Federal surveillance program is now underway in "high-risk" States to reveal any VEE activity. Reports of sick horses are to be investigated for VEE in all States.

EMERGENCY PROGRAMS  
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UNITED STATES DEPARTMENT OF AGRICULTURE

U. S. DEPT. OF AGRICULTURE  
NATIONAL ANIMAL DISEASE SURVEILLANCE

MAR 28 1974

CANALOG

## VEE ACTIVITIES

### Epidemic VEE Virus Isolations

During the month of February, the first confirmation of epidemic VEE virus in Starr County, Texas, was reported by the Center for Disease Control, Atlanta, Ga. This case was investigated November 7, 1971, and increases the total number of counties in Texas, in which epidemic VEE virus was identified in 1971 from 25 to 26.

### Investigations

In 1972, the first suspected case of VEE in Texas was reported to the Animal Health office in Austin on or about February 10, 1972. This case was reported by the Texas Veterinary Medical Diagnostic Laboratory in College Station after they had conducted a HI test which was positive for VEE and EEE. This sample had been collected on January 20 by a practitioner. The HI titer was indicative of vaccination, but the horse had not been vaccinated. No other tests have been conducted. The animal had been in the pasture for the past 6 or 7 years and was first noticed to be sick on January 18. The sample was collected on January 20, and the pony died on January 21 with some indication of CNS disturbance prior to death. During the month of January, there were some warm days in Marshall, Texas, and some mosquitoes were present. A VEE epidemiologist has investigated the case and has collected 21 blood samples from dogs in the Marshall area for testing for VEE antibodies. In addition to this, representatives of the Texas A&M Entomology Department collected mosquitoes in the Marshall area on February 26 for virus isolation. HI tests on the dog samples were negative, one of the dogs was from the same premises as the pony.

Cumulative total of equine encephalitis investigations in calendar year 1972-- 25 herds, 386 horses. Eleven of these cases have been reported as negative for VEE. No positive reports have been received, the remaining 14 cases are pending.

### Vaccinations

Twenty-two States sent in VEE vaccination reports in January. Five reported no vaccinations. The other 17 States reporting had 2,657 horses vaccinated for VEE.

### VEE Surveillance

During the month of February, much progress was made toward the implementation of the surveillance system prior to the next vector season. Firm agreements have been made with Department of Defense and Department of the Interior as mentioned in the January report. A tentative agreement has been made with the Texas A&M Entomology Department for a survey of mosquitoes to detect viral activity.

The Center for Disease Control at Fort Collins and the University of California are planning a surveillance system using burros as sentinel animals in several sites in Texas, Arizona, New Mexico, California, and Louisiana.

African swine fever (ASF) is an acute, fever-producing, highly contagious viral disease of swine. It is considered the most deadly of swine diseases. Most swine contracting this disease die very quickly. African swine fever closely resembles and is often confused with hog cholera, even though caused by a very different, unrelated virus. In Africa, an inapparent infection occurs in the wild wart hog, bush pig, and other wild swine which then serve as carriers to transmit the infection to domestic swine. Surviving domestic hogs remain as carriers. Other species of animals (including man) are not susceptible to ASF.

History ... The disease was first recognized in 1909, in Kenya, East Africa. Mortality with ASF frequently approaches 100 percent. From 1909 until 1912, 15 outbreaks were reported. From 1931 to 1961, approximately 60 outbreaks occurred in Kenya. Outbreaks continue to occur in Kenya and in various parts of Sub-Saharan Africa. It became a matter of concern to all Europe when the disease appeared in Portugal in 1957, and in Spain in 1960. Outbreaks still occur in these areas. Then, in 1964, and again in 1967, outbreaks occurred in France. France launched a successful eradication program through quarantine and slaughter. France is now asking to be recognized as free of African swine fever. This disease occurred on the island of Madeira in 1966, and in Italy in 1967. In June, 1971, African swine fever first appeared in the Western Hemisphere, in Cuba. Slaughter of all swine in Havana Province, appears to have eliminated the disease. This involved the slaughter of approximately 460,000 swine followed by cleaning and disinfection of all premises.

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AFRICAN SWINE FEVER - SPAIN & PORTUGAL \*  
(number of outbreaks by year)

	<u>SPAIN</u>	<u>PORTUGAL</u>
1961	280	174
1962	379	1226
1963	778	306
1964	427	305
1965	277	5433
1966	810	3365
1967	1419	966
1968	1033	1201
1969	668	714
1970	911	671
1971	871	552 **

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\* From International Office of Epizootics (OIE)

\*\* December Data for 1/2 month



## AFRICAN SWINE FEVER - SPAIN &amp; PORTUGAL \*

(1971 - outbreaks by month)

	<u>SPAIN</u>	<u>PORTUGAL</u>
January	78	16
February	109	15
March	92	5
April	71	11
May	56	15
June	51	7
July	51	11
August	59	43
September	70	105
October	91	135
November	92	145
December	<u>51</u>	<u>44</u> **
Total Outbreaks	871	552 **
Total Swine Population	6,139,000	1,660,000

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\* From International Office of Epizootics (OIE)

\*\* December Data for 1/2 month

Signs ... The signs of ASF and the signs of hog cholera are so similar that it is impossible to tell the difference by looking at sick animals. Early in the outbreak of either disease, signs may go unrecognized until a few hogs have died. Hogs usually develop the disease 5 to 9 days after exposure.

An infected hog first undergoes an abrupt rise in temperature, although this is seldom noticed because it usually develops without other signs. Occasionally, hogs seem to "burn up" with fever. In acute ASF, hogs generally die 4 to 7 days after onset of fever. A day or two before death, the temperature falls quickly. Swine with ASF often retain normal appetites, while swine with hog cholera usually go off their feed and die without regaining their appetites. The disease generally looks like a severe type of hog cholera.

New outbreaks may spread so fast they almost seem to explode, as has been the case in Cuba. These are usually the acute form of the disease. Once ASF becomes established, a milder form may develop as has been the case in Portugal and Spain.

Despite years of experimentation, which extend back to the early years of the century, an ASF vaccine has not been developed. However, work is continuing along this line at the ARS Plum Island (N.Y.) Animal Disease Laboratory (PIADL), where research on foreign diseases is conducted under



maximum security. ASF virus is exceptionally resistant. In experiments, blood was still infective after 18 months at room temperature and after 6 years at approximately 40° F.

Presence of virus in the blood is a consistent feature and thus, all tissues and organs contain virus. During the acute phase, the blood routinely contains in excess of 1 million lethal doses per milliliter.

The virus has been propagated in rabbits and in embryonated chicken eggs, but a reduction of virulence to swine to a safe level was not accomplished by passage in these hosts. Experiments are complicated by the rare survival rate of infected swine and by the lack of neutralizing (protective) antibodies.

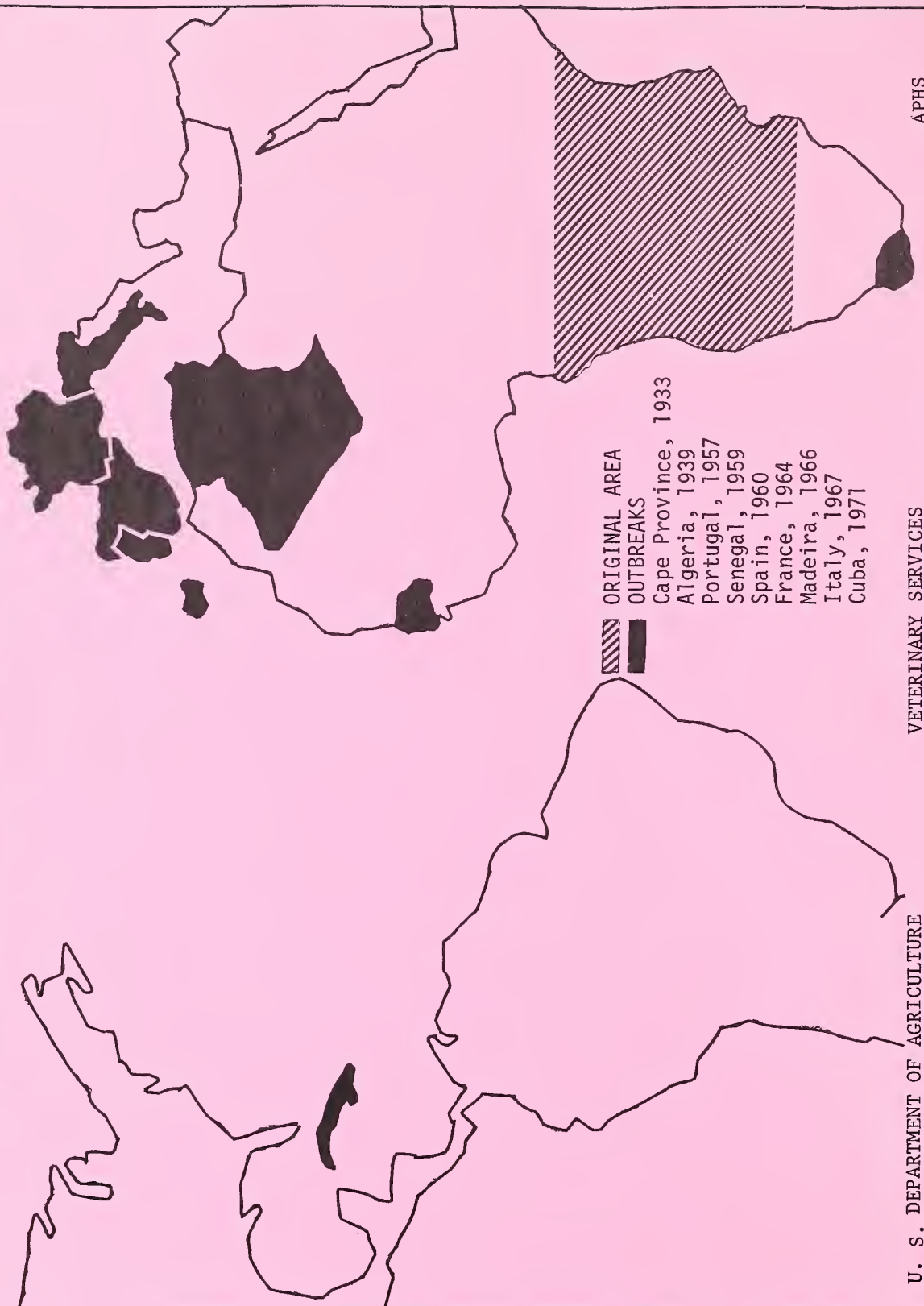
However, a test which involves the "clumping" of red blood cells around infected white cells in a test tube proves ASF is present. This test was developed by USDA scientists from PIADL working at the East African Veterinary Research Organization Laboratory in Kenya. The practical value of this test was demonstrated during a USDA-supported research project in Spain where an examination of more than 20,000 field specimens clearly established it as a very useful and valuable diagnostic tool. The United States is now using this test in surveillance for ASF on most specimens submitted for hog cholera examination.

Spread ... African swine fever is spread by: Contaminated garbage, feed, or water; contact between infected and susceptible hogs; carrier animals; contaminated premises; clothing, footwear, equipment; improper disposal of infected carcasses; and movement of exposed or infected animals from one place to another. In addition, ticks have been recently shown to harbor and transmit the virus of ASF.

References available ... PA-817, "African Swine Fever," may be obtained by requesting a copy from:

Office of Information  
United States Department of Agriculture  
Washington, D.C. 20230

# AFRICAN SWINE FEVER



## PROMPT DISEASE REPORTING

The subject, prompt disease reporting, has been knocked back and forth for many years. Everyone recognizes the need for prompt disease reporting, but there is still a lack of promptness in reporting diseases. It does not matter how elaborate the plans are for the control or eradication of a disease, the amount of manpower available, the size of the stockpile of vaccine, or the laboratory diagnostic capabilities that are available, if the disease is not reported until 30-45 days after it has entered a new area. The most important factor in disease control and eradication is disease detection; that is, to immediately determine the presence of a disease before it has time to become established in the population, and before there has been time for spread of the disease through livestock, people, or vector movements. Efficient disease control is directly related to rapid disease reporting to the responsible agency.

All Veterinary Services personnel and all cooperating agencies should do their utmost to establish contacts with the public and with the horse-owning people so that all livestock diseases are reported to the appropriate officials as soon as possible. If we can get away from this one-week, two-week, three-week, one-month delay that sometimes happens and has been happening throughout the course of VEE in this country, we can make progress in the control of the spread of this disease.

## FOOT-AND-MOUTH DISEASE

Foot-and-Mouth Disease in Holland ... Recently Holland has been experiencing an epizootic of foot-and-mouth disease (FMD). Prior to this outbreak, Holland's last case of reported FMD was in April 1967. An isolated outbreak of FMD type C was reported on June 26, 1971, in 9 pigs, then in November and December several outbreaks of type 0 were reported in pigs in several pig establishments. On December 11, there was an outbreak of type 0<sub>1</sub> involving both pigs and calves. On December 30, 1971, 4 new cases of FMD type 0<sub>1</sub> were reported in feeder calves and one case in pigs. As of January 19, there have been 23 outbreaks of FMD in swine in Holland.

FMD Information Kit Under Preparation ... A basic foot-and-mouth disease information kit, for use during a U.S. outbreak of this devastating virus disease of cloven-footed animals, is being prepared by the APHS Information Division. Its proposed use would be by State and Federal regulatory veterinarians in charge of Emergency Animal Disease Eradication Organizations in the States. The kit provides tools for quickly and adequately informing the public during the early critical days of an outbreak for encouraging public cooperation to stamp out the disease.

When completed, the kit will include news releases, photos, television slides with interview, radio public service spots, background materials, printed materials and guidelines for using the kit.

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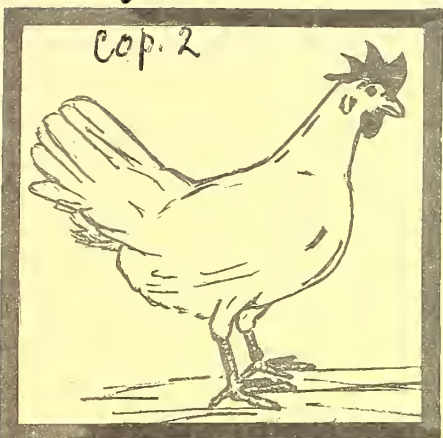




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FOREIGN ANIMAL DISEASES REPORT NO. 3  
MARCH - APRIL 1972

USDA DECLARES NATIONAL EMERGENCY BECAUSE OF EXOTIC NEWCASTLE DISEASE

On March 14, 1972, Secretary of Agriculture, Earl L. Butz, declared a national emergency because of a spreading outbreak of exotic Newcastle disease in southern California. The action was taken to safeguard the nation's \$5 billion poultry industry.

If left unchecked, it is estimated that exotic Newcastle disease, which has also occurred in Texas, New Mexico, and Florida, could cause some \$500 million in losses to the industry. This region is among the Nation's top egg producing areas.

The emergency action was recommended to the Department by a group of scientific advisors and representatives of the poultry industry.

VEE OUTBREAK IN MEXICO



An outbreak of Venezuelan equine encephalitis (VEE) has affected the area of Tierra Caliente in the municipalities of Cutzamal de Pinzon and Ciudad Altamirano. The area is located between Mexico City and Acapulco, Mexico. The outbreak was verified by Dr. Roberto Saenz who heads the campaign against VEE in that country. At the present time it is not possible to state how many animals have died. Persons experienced in equine encephalitis have been sent to aid the villagers and to assist in the incineration of the dead animals. Teams are currently vaccinating an approximate 75 square mile area from Ciudad Altamirano to Iguala. It is believed that the foci of infection is not completely eliminated but under control.

EMERGENCY PROGRAMS  
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ANIMAL AND PLANT HEALTH INSPECTION SERVICE  
UNITED STATES DEPARTMENT OF AGRICULTURE

U. S. DEPT. OF AGRICULTURE  
NATIONAL ANIMAL HEALTH SERVICE

MAR 28 1972

GALLOP



## NEWCASTLE DISEASE - A REVIEW

Newcastle disease is a highly contagious and fatal virus infection of domestic poultry, wild birds and pet birds characterized by neurologic and pneumonic disturbances. While man may be infected with the virus, the disease is of minor importance, causing a conjunctivitis which is treated symptomatically. Outbreaks of Newcastle disease vary greatly in intensity. In some instances, particularly in adult birds, the symptoms may hardly be recognizable. In other cases, the disease may be very severe, resulting in deaths of the majority of those affected. Other names include Ranikhet disease, respiratory-nervous disorder, Philippine fowl pest, Madras fowl pest, Batavia disease, pseudoplague of fowls, pseudo fowl pest, avian pneumoencephalitis, avian distemper and others.

History ... Newcastle disease was first recognized in the middle 1920's in the Dutch East Indies and England. It was eradicated in England at that time. It was first identified in the United States in 1944 and was apparently present in the United States as early as 1935. Domestic strains of Newcastle disease virus are now present in every poultry producing area of the world.

A highly virulent form of the disease was reported in a pet shop in New York in the summer of 1970. This outbreak was in birds of South American origin. A virus from these birds was identified and characterized as velogenic. A velogenic Newcastle virus was isolated from a Texas flock of chickens in late 1970. This outbreak involved many flocks in the Texas-New Mexico area. In addition to the New York and Texas-New Mexico outbreaks, a pet bird flock in Florida has been depopulated. The virus is also present in Puerto Rico. California is now experiencing a severe outbreak of the disease.

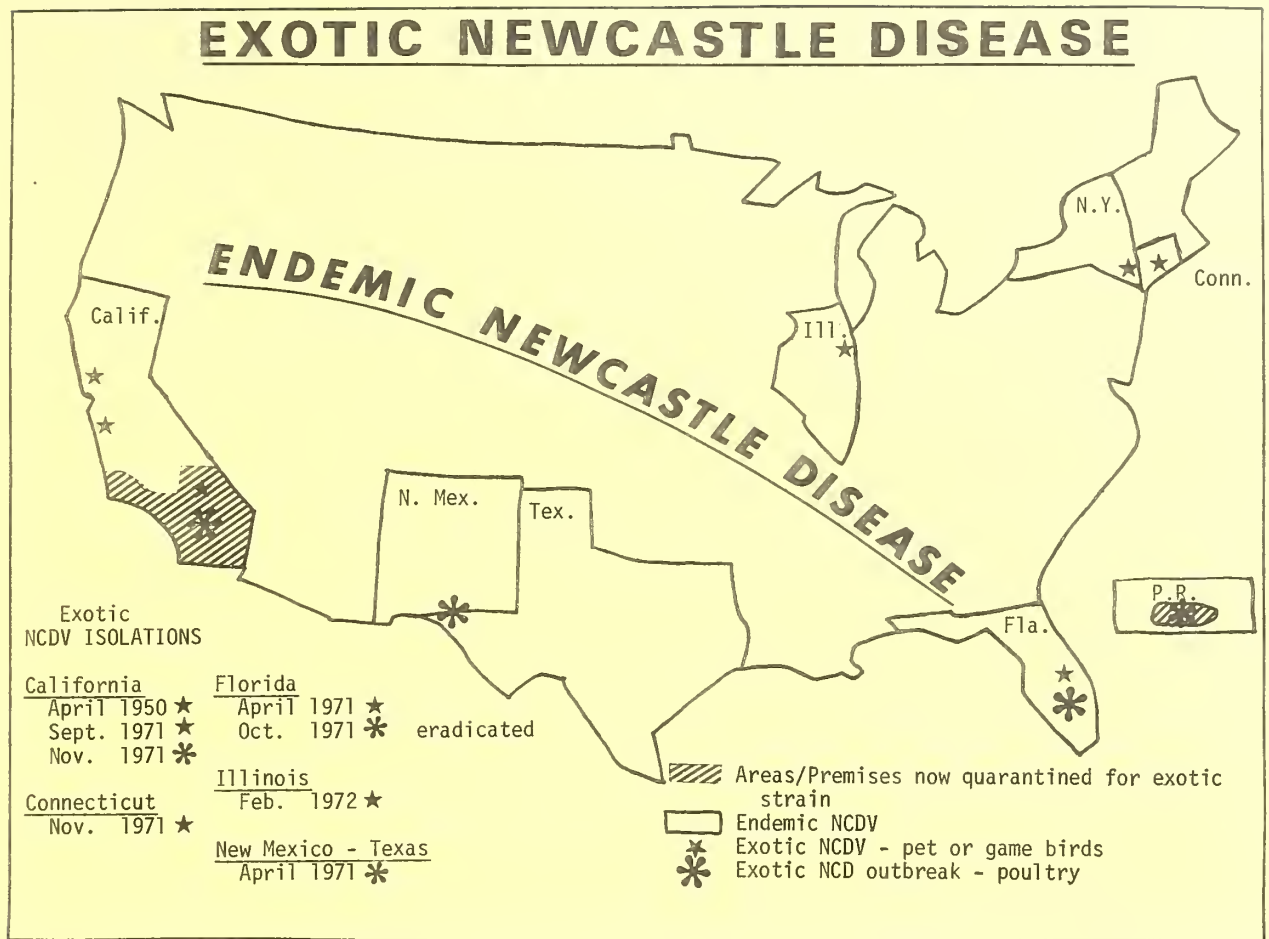
General ... The exotic Newcastle that now exists in certain areas of the United States is a highly virulent strain of the disease that is characterized as vicerotropic, velogenic Newcastle disease.

There are three strains of the virus, velogenic, mesogenic, and lentogenic. Differentiation is based upon the speed with which a strain causes mortality in chick embryos. The term "viscerotropic" is used to further characterize the virus, indicating the affinity of the virus to attack the visceral organs.

The velogenic form is most severe. In susceptible flocks the velogenic form is an acute disease that spreads rapidly through a flock. The mortality is usually over 90 percent. The lentogenic form is the least severe disease and is characterized by mild respiratory symptoms and a sudden drop in the egg production of laying flocks. The mortality of the lentogenic form of Newcastle in adult chickens is negligible, but it may reach 50 percent in young chickens. The mesogenic form is between velogenic and lentogenic in severity.

Diagnosis ... The incubation period of velogenic Newcastle disease in chickens varies from 1 to 25 days. The average is 4 to 5 days. All ages are susceptible to the velogenic form. Velogenic Newcastle disease appears suddenly and spreads quickly. The diseased birds will show depression and increased respiration, followed by weakness and prostration.

# EXOTIC NEWCASTLE DISEASE



Clinical Signs ... Clinical signs of Newcastle may include an increased temperature, respiratory distress expressed by coughing and gasping, nervous involvement, edema around the head, a drop in feed consumption, and a drop in egg production. Egg quality may be affected and a high mortality may occur in the flock.

Postmortem Lesions ... Hemorrhages will be present on the submucosa of the proventriculus and on lymphoid areas of the intestines. Hemorrhages may be on the gizzard. The air sacs may be cloudy with yellowish exudate.

Laboratory ... The laboratory findings are used to aid in diagnosis as well as to characterize the virus. Newcastle disease virus (NDV) has the ability to adsorb to the surface of red blood cells and produces hemagglutination (HA). Antibodies against NDV inhibit hemagglutination. The HA and hemagglutination inhibition (HI) tests comprise the primary diagnostic procedures used to detect NDV and antibodies.

Additional laboratory procedures are required to determine the virulence of any strain of NDV and classify it as lentogenic, mesogenic, or velogenic (low, medium, and high degree of virulence). Chick embryos receiving a

minimal lethal dose of velogenic strain die within 24-50 hours. When chick embryo fibroblast cell cultures (CEFCC) are inoculated with velogenic NDV, clear and red plaques are formed. Some of these plaques are usually much larger than those produced by either lentogenic or mesogenic strains. Mesogenic strains usually kill chick embryos in 50 to 60 hours and produce only small clear plaques on CEFCC. Lentogenic strains require 100 or more hours to kill embryos and usually no plaques are produced on CEFCC.

Chickens receiving velogenic strains of NDV usually develop severe disease and often die. Mesogenic NDV usually produces a mild disease and rarely kills except when injected directly into the central nervous system. Lentogenic strains produce only a mild or inapparent disease irrespective of the method of exposure.

Transmission ... Newcastle disease has been known to spread by many means. Spread has historically been caused by wild birds, imported birds, eggs (surface), infected domestic fowl, human tracking and contaminated man-made objects. Aerosols and wind are also considered methods of spread.

Control ... Control is based upon destruction and disposal of infected and exposed flocks, cleaning and disinfection, quarantining and vaccination. The commercially available vaccines appear to be beneficial in controlling and preventing outbreaks when used in the recommended manner.

## USDA REGULATES PET BIRD IMPORTS

On March 10, 1972, regulations went into effect which calls for a 45-day overseas quarantine on imported psittacines (parrots, and related birds), and mynah birds. The regulations affect about 250,000 psittacines which are imported annually and some 34,000 greater and lesser hill mynahs. Most of the 3 million psittacines sold annually in the United States are domestically raised parakeets. The mynahs are the talking variety, which are taught to mimic the human voice.

The 45-day overseas quarantine is already required for psittacines under U.S. Public Health Service regulations to guard against introduction of psittacosis, or parrot fever. The birds may be imported only through Miami, New York, Seattle, or Honolulu. Birds from Mexico may also enter at San Ysidro, California, and from Canada at Buffalo or Detroit. Birds will have to be isolated in importer-owned facilities located in these ports of entry for a minimum of 30 days.

Each shipment of birds has to be qualified for import both overseas and again in the United States through blood tests for Newcastle disease. A certificate must show that no Newcastle outbreaks occurred on the premises of the overseas quarantine or adjoining premises for 90 days prior to shipment. All birds in overseas quarantine and in the United States isolation facilities must enter and leave at one time. These facilities will be furnished by the importer and approved by USDA veterinarians. USDA will also monitor the overseas quarantine operations.



## EMERGENCY PROGRAMS OF APHIS GIVEN TASK

USDA responsibility for the coordination of the exotic Newcastle disease emergency relative to the Secretary's order has been delegated to Emergency Programs, Veterinary Services, APHIS. National Headquarters for this operation will be the Federal Center Building, Hyattsville, Maryland. A field operation office has been established in Riverside, California, to coordinate and assist State/Federal efforts to get ahead of the disease, stop its spread, and activate procedures for its eventual elimination.

The funds made available by the emergency declaration will be used to:

1. Eliminate all infected and exposed poultry flocks and indemnify their owners.
2. Supply vaccines of the domestic strain of Newcastle disease to the owners of flocks in areas quarantined for the disease. (These vaccines provide protection against exotic Newcastle disease).
3. Conduct a supervised vaccination program in the quarantined areas.

Under the emergency program, USDA will pay up to 100 percent of the indemnity costs, while California will furnish supporting services and other resources to offset its share of program costs. This emergency action was recommended to the Department by a group of scientific advisers and representatives of the poultry industry.

As of March 31, 1972, 2,060 flocks of poultry have been inspected since the emergency was declared. This involved over 28 million birds. A total of 2,747,000 birds have been vaccinated under supervision and 44 flocks with 735,265 birds have been depopulated since the declaration. Sixty-three flocks involving 313,848 birds were depopulated prior to the emergency. The total birds destroyed is 1,149,113 which involved 107 flocks. Cleaning and disinfection is being conducted after the flocks are depopulated.

## VEE ACTIVITIES

VEE Encephalitis Investigations ... During the month of March, investigations were conducted in 11 herds in seven States. This brings the total number of investigations in Calendar Year 1972 to 36. Of these, 27 have been diagnosed as negative for VEE with the remaining 9 cases pending laboratory results.

VEE Vaccinations ... Of special significance for the control of VEE was the announcement on March 17 by the U.S. Department of Agriculture that studies just completed indicate there is no evidence of damage to either the brain or spinal cord of vaccinated horses. These studies were conducted at Denver, Colorado, and Ames, Iowa, by the Veterinary Sciences Research Division, Agricultural Research Service, USDA. The brains and spinal cords of 45 horses were examined grossly and microscopically between 10 and 49 days following vaccination.

Dr. Francis J. Mulhern, Acting Administrator of USDA's Animal and Plant Health Inspection Service said, "With these favorable results with the vaccine tests under controlled conditions, we again urge all horse owners to vaccinate for VEE, because this virus could break out anywhere in the country." Dr. Paul DeLay, VSR Director, reported, "Experiments still in progress will evaluate the effects of the vaccine on pregnant mares and young foals. Tests are also being conducted to determine the quality and duration of immunity."

During February 1972, 23 States reported 3,608 horses were vaccinated at owner's expense. Those States reporting were Alaska, Arkansas, Florida, Georgia, Hawaii, Indiana, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Montana, Nebraska, Nevada, New York, Oregon, South Carolina, Tennessee, Utah, Vermont, Virginia, West Virginia, and Wisconsin.

VEE Surveillance - 1972 ... Surveillance samples are being collected by Army and Air Force base veterinarians, Predator Control personnel of the U.S. Department of the Interior, and Veterinary Services personnel.

Through March 1972, 103 samples have been collected from deer, dogs, foxes, rabbits, opossums, and horses. All of these samples were negative for VEE antibodies. These samples were collected in the States of Arizona, Georgia, New Mexico, Ohio, and Texas. The samples from Ohio were obtained to provide a baseline for canine serology.

#### Results Received in 1972 From Surveillance Samples Collected in 1971:

Hardin County, Texas--One sample from a horse collected prior to vaccination for VEE on July 29, 1971, had a low titer for VEE. This case must be considered questionable for VEE because of the low titer, lack of illness in the horse, and lack of confirmed cases in this county. A serum sample from a mockingbird collected on August 4, 1971, had a titer of greater than 1:50 for VEE and negative for EEE and WEE. Twelve other samples were negative. These were collected from horses, birds, rabbits, turtles, and a goat.

Jasper County, Texas--Of 18 samples collected in 1971, all were negative except one 6-month old bull calf with a low SN titer for VEE. This sample was collected on August 4, 1971. The negative samples were collected from horses, cows, pigs, and armadillo.

Jefferson County, Texas--Of 7 samples not previously reported, all were negative for VEE. These samples were collected from goats, nutria, and horses.

Fort Hood, Texas--In 1971, sera was collected from 110 deer on the Fort Hood Military Reservation and were negative on laboratory testing for VEE.

New Mexico--In 1971, the New Mexico Health and Social Services Laboratory reported 8 sentinel chickens with positive HI titers for VEE. In these 8 birds, there did not seem to be any possibility of a cross reaction with WEE or SLE. This laboratory does not conduct tests for EEE.



## CANADA TO VACCINATE HORSES FOR VEE

Canadian Agriculture Minister, H. A. Olson, announced February 25, 1972, that horse owners will soon be able to have their animals immunized against Venezuelan equine encephalomyelitis disease. He said VEE vaccine was being licensed for manufacture in Canada and is expected that supplies will become available to veterinarians by May 1, 1972. The Canadian vaccine will be similar to the type used with success in the United States to vaccinate thousands of horses following an outbreak of the disease last July in Texas. Vaccination of horses will be on a voluntary basis. Cost of immunization will be the responsibility of the owner.

## FOOT-AND-MOUTH DISEASE IN ECUADOR AND PERU

The El Mundo, a newspaper in Puerto Rico, carried the following news item: The Sanitary Authorities declared a state of emergency on the border of Ecuador and Peru on account of foot-and-mouth disease which has caused the death of 500 head of cattle, and has affected 17,000 others. A local official said that 25,000 head of cattle could be affected by this disease.

Instances such as this further confirms the importance of our continuing efforts to maintain this country free of this formidable disease.

## RINDERPEST OUTBREAK IN TURKEY

A report we received indicates that Veterinary officials in Turkey have taken emergency measures to control an outbreak of rinderpest in West Turkey. The Aydin border has been closed to shipments of livestock, 117 infected animals have been killed and more than 60,000 animals have been vaccinated. Veterinary teams from Bursa, Bulikesir, and Canakkale have been called in to assist in combatting the disease. The outbreak is believed to be caused by uninspected and uncertified cattle shipments from Eastern Turkey where rinderpest caused wide spread damage two years ago. Veterinary officials believe that the early discovery, prompt diagnosis, and strict measures undertaken will minimize damage caused by the current outbreak.

## ANIMAL AND PLANT HEALTH SERVICE BECOMES APHIS

Effective April 2, 1972, APHS became the Animal and Plant Health Inspection Service and the Consumer and Marketing Service (C&MS) was renamed the Agricultural Marketing Service.

This combines the Meat and Poultry Inspection Program, formerly a part of C&MS, with the Animal and Plant Health Service (APHIS), which had been separated from USDA's Agricultural Research Service in October 1971.

## VEE INFORMATION MATERIAL

To assist in launching the VEE vaccination program this season, television spot announcements were sent direct to TV stations throughout the country, recently. These public service announcements urge horseowners to vaccinate immediately to protect unvaccinated horses. A spanish version was also distributed to selected TV stations in Texas and other areas of the southwest including southern California.

In addition, radio spot announcements are being sent to stations in "high-risk" areas and other parts of the country.

The Program Aid on VEE is being printed and will be furnished to Veterinary and Extension Services offices in the near future. Also, posters with the "vaccinate-now" message will be off the press soon, and should be distributed at horse shows and other locations frequented by horse owners and handlers.

A movie being produced by USDA on the VEE emergency is now entering final stages of production, and stations will be advised of its availability. Another VEE film by American Cyanamid Company should be available for public showings by the end of April. The latter film is longer and emphasizes mosquito abatement aspects of emergency operations last year.

We have 35 mm color slides and black and white photographs available concerning VEE. Let us know your needs.

## FRANCE FREE OF AFRICAN SWINE FEVER

France has been deleted from the USDA list of countries where African swine fever is known to exist. This amendment to the Code of Federal Regulations was signed by the Administrator for the Animal and Plant Health Inspection Service, Dr. F. J. Mulhern, on March 13, 1972. While freeing French pork and pork products of the ASF restrictions, these products will still remain subject to those regulations affecting countries where rinderpest and foot-and-mouth disease exist.

## USDA ALLOWS MEXICAN LIVESTOCK IMPORTS FROM AGUAS CALIENTES

Animals from the Mexican State of Aguas Calientes may now be exported to the United States. According to officials of USDA's Animal and Plant Health Inspection Service (APHIS), livestock from the State had been excluded since the foot-and-mouth disease outbreak in Mexico during the early 1950s. The disease was eradicated in Mexico in 1958, but the import embargo had never been lifted.

Mexican officials asked APHIS to allow Aguas Calientes livestock to enter the United States under the same restrictions imposed on livestock from northern Mexico. APHIS veterinarians see no reason for continuing the exclusion.